REMARKS

Claims 10 to 12, 16 to 21 and 25 to 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over Applicants' Admitted Prior Art (AAPA) in view of Kefferstein et al. (US 6,564,604) and Shtikan et al. (US 7,192,624). Claims 15 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Kefferstein et al., Shtikan et al. and Warichet et al. (US 6,921,439).

New claims 35 to 38 are hereby added to more particularly and distinctly claim the invention and claims 29 and 30 are hereby canceled. Support is found at in the specification at paragraphs [0036] to [0038], for example.

Reconsideration of the application based on the following is respectfully requested.

Rejections under 35 U.S.C. §103(a): AAPA, Kefferstein et al. and Shtikan et al.

Claims 10 to 12, 16 to 21 and 25 to 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Miller et al. and Shtikan et al.

AAPA is disclosed in the specification at [0001] to [0004].

Kefferstein et al. discloses that conventionally "steel sheets intended for high temperature forming and/or heat treatment are not delivered with a coating in view of the retention of the coating during the heat treatment, as steels are generally heat treated at relatively high temperatures, far in excess of 700 degrees C. Indeed, zinc coating deposited on a metallic surface was considered heretofore as likely to melt, flow, foul the hot forming tools during the heat treatment at temperatures in excess of the zinc melting temperature, and degrade during quenching. Therefore, the coating is applied on the finished part, which necessitates careful cleaning of the surfaces and hollow areas." (Kefferstein et al., col. 1, lines 13 to 24). Kefferstein et al. then suggests that "contrary to preconceived ideas, during heat treatment or temperature rise for hot forming, the coating forms a layer alloying with the steel of the strip and presents then a mechanical resistance such that it prevents the coating material from melting. The resulting compound presents high resistance to corrosion, abrasion, wear and fatigue. The coating does not

alter the steel formability properties, thus allowing a wide range of cold and hot forming operations." (Id., col. 2, lines 52 to 59).

Shtikan et al. discloses a continuously operating furnace and method for obtaining a thermal diffusion coating on the outside surface of metallic articles. (See Abstract). In describing thermal diffusion coating processes, Shtikan et al. states that "[u]sually thermal diffusion coating process utilizes zinc diffusion to apply zinc coating on components made of ferrous materials like iron, low-carbon steels, medium carbon and alloy steels, high carbon steels and cast irons ... The components are embedded in finely divided zinc powder and heated to a temperature, corresponding to the point at which zinc melts, usually at 350 to 450 degrees C. Since the component to be coated is covered by zinc powder to provide close intimate contact therewith, heating up to this temperature is accompanied by diffusion of zinc atoms into the bulk of the object and formation of external coating layer. This layer consists either of pure zinc or of its alloys with the atoms of the host component. The coating is corrosion-resistant; it has good appearance and makes a good paint base. Due to the small dimensional changes involved in this process it is of particular value for the treatment of small parts, e.g., bolts, nuts, bushings, and small hardware articles such as hose clamps and electrical components, etc." (Col. 1, lines 19 to 30).

Claim 10 recites "[a] process for producing a press-hardened component from a semi-finished product made of unhardened, hot-formable steel sheet, the process comprising:

forming a component blank from the steel semi-finished product using a cold-forming process, the component blank including a margin contour corresponding approximately to a contour of the press-hardened component and a margin edge;

trimming the component blank at the margin edge to the margin contour;

heating and press-hardening the trimmed component blank using a hot-forming tool; and

covering the press-hardened component blank with a corrosion-prevention layer in a coating step, wherein the coating step includes a thermal diffusion process."

Claim 20 recites "[a] process for producing a press-hardened component from a semi-finished product made of unhardened, hot-formable steel sheet, the process comprising:

heating and press-hardening the semi-finished steel product using a hot-forming tool so as to form a press-hardened component blank, having a margin contour corresponding approximately to the press-hardened component and a margin edge;

trimming the press-hardened component blank at the margin edge to the margin contour;

covering the press-hardened, trimmed component blank with a corrosion-prevention layer in a coating step, wherein the coating step includes a thermal diffusion process."

None of the cited references, alone or in combination, discloses the step of "covering the press-hardened, trimmed component blank with a corrosion-prevention layer in a coating step, wherein the coating step includes a thermal diffusion process" of claims 10 and 20. AAPA discloses that a strip coating to prevent corrosion is customarily applied before "the heating and press-hardening" and "trimming" steps of claims 10 and 20. (Present specification, paragraph [0004]). Kefferstein et al. discloses that conventionally coatings are not applied to a steel sheet until after heat treatment, but in no way teaches or suggests that the steel sheets are trimmed before coating. Only trimming after hot-forming and coating is discussed in Kefferstein et al. (e.g., Kefferstein et al., col. 1, line 66 to col. 2, line 13). Shtikan also does not cure this deficiency because Shtikan merely describes a method for obtaining a thermal diffusion coating by heating components to a temperature of 350 to 450 degrees Celsius, but does not disclose that the iron or steel componets are "press-hardened, trimmed component blanks" as required by claims 10 and 20. (Col., lines 19 to 21). Thus, none of the references discloses the "covering" step of claims 10 and 20.

Moreover, it is respectfully submitted that Shtikan operates at temperatures above those suitable for press-hardened trimmed blanks and the steel sheets of Kefferstein et al., and it is respectfully submitted that, at the time of the present invention, one of skill in the art would not have combined these references. At the time of the present invention, one of ordinary skill in the art would not have coated a press-hardened, trimmed steel component blank as required by claim, i.e., a high-strength steel blank, using a thermal diffusion process because such a high-strength steel blank is very temperature sensitive and loses its high strength qualities when heated to temperatures above 320 degrees Celsius. One of ordinary skill in the art would understand from the teachings of Shtikan that it is necessary to heat components to a temperature close to the range of 350 to 450 degrees Celsius, i.e., close to the melting temperature of zinc, for zinc to effectively

infiltrate the surface of steel. Therefore, at the time of the present invention, one of skill in the art would only have found it acceptable to use a thermal diffusion coating before steel had been press hardened, i.e., before the steel had been strengthened and when the steel was not as temperature sensitive, because coating a high strength steel using thermal diffusion according to the process in Shtikan would produce blanks without the high strength qualities brought about by the press-hardening step.

Based on the foregoing, there is no reason why, at the time of the present invention, it would have been obvious to one of skill in the art to have applied the thermal diffusion method of Shtikan to a press-hardened, trimmed component blank and it is respectfully submitted that the Examiner's reasoning for combining the references is conclusory and is not sufficiently articulated to support a prima facie case of obviousness.

Withdrawal of the rejections under 35 U.S.C. §103(a) to claim 10, along with claims 11, 12, 16 to 19 and 30 to 32 depending therefrom, and claim 20, along with claims 21 to 29, 33 and 34 depending therefrom, is respectfully requested.

With further respect to claim 10, it is also respectfully submitted that none of the cited references or the AAPA disclose "trimming" a steel component blank before the blank is "heat[ed] and press-harden[ed]" as required by claim 10. In particular, with respect to the AAPA, DE 101 49 221 (also published as U.S. 2003/0066582 A1), which is discussed at paragraph [0004] of the present specification, discloses pre-forming and pre-cutting a blank prior to hot forming, but does not disclose performing a final "trimming" step that includes "trimming the component blank at the margin edge to the margin contour" until the final contour is provided after hot forming. Thus, the trimming discussed in DE 101 49 221 at paragraph [0004] of the present specification is not the "trimming" step required by claim 10. Claim 7 of U.S. 2003/0066582 A1 clearly illustrates that this pre-cutting trimming is different from the "trimming" step required by claim 10 in the present application. (See U.S. 2003/0066582 A1, claim 7 ("The method of claim 1, and further comprising the step of cutting the sheet metal article in a post-operation.")).

Thus, withdrawal of the rejection under 35 U.S.C. 103(a) of claim 10 for this additional reason is respectfully requested.

Rejections under 35 U.S.C. §103(a): AAPA, Kefferstein et al., Shtikan et al. and Warichet et al.

Claims 15 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Kefferstein et al., Shtikan et al. and Warichet et al. (US 6,921,439).

Warichet et al. does not cure the deficiencies of AAPA, Kefferstein et al. and Shtikan et al. discussed above with respect to claim 10, upon which claim 15 depends, and claim 24, upon which claim 20 depends. Thus, in view of the arguments above with respect why claims 10 and 20 are not unpatentable over AAPA in view of Kefferstein et al. and Shtikan et al., withdrawal of the rejection under 35 U.S.C. 103(a) of claims 15 and 24 is respectfully requested.

CONCLUSION

The present application is respectfully submitted as being in condition for allowance and applicants respectfully request such action.

Respectfully submitted,
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